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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,975	09/20/2005	Donald B Warfield	SL1225	3466
4249	7590	04/05/2007		
CAROL WILSON BP AMERICA INC. MAIL CODE 5 EAST 4101 WINFIELD ROAD WARRENVILLE, IL 60555			EXAMINER PRETLOW, DEMETRIUS R	
			ART UNIT 2863	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS		MAIL DATE 04/05/2007	DELIVERY MODE PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/549,975	WARFIELD ET AL.	
	Examiner	Art Unit	
	Demetrius R. Pretlow	2863	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38-43 is/are allowed.
- 6) ☒ Claim(s) 47 is/are rejected.
- 7) ☒ Claim(s) 1-37 and 48-60 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/11/06</u> .  | 6) <input type="checkbox"/> Other: ____                           |

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement filed December 11, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. EP1223431 is missing.

### *Claim Objections*

Claims 1,25,29,44,47,59,60 are objected to because of the following informalities:

In claim 1, line 12, examiner can not ascertain as to what is meant by *generally* portable unit .

In claim 25, line 2, , examiner can not ascertain as to what is meant by *generally* fixed unit .

In claim 25, line 15, examiner can not ascertain as to what is meant by *substantially* movable unit.

In claim 29, line 6, examiner can not ascertain as to what is meant by *generally* stationary unit.

In claim 29, line 21, examiner can not ascertain as to what is meant by *generally* movable unit.

In claim 44, line 6, examiner can not ascertain as to what is meant by *substantially* fixed unit.

In claim 47, line 9, examiner can not ascertain as to what is meant by *generally* portable unit.

In reference to claim 59, line 24 examiner can not ascertain as to what is meant by *generally* movable unit.

In reference to claim 60, line 25 examiner can not ascertain as to what is meant by *generally* movable unit.

In reference to claim 29, line 1 examiner can not ascertain as to what is mean by carried by the earth.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 47 rejected under 35 U.S.C. 102(a) as being anticipated by Rosenthal et al. (Low Cost AC Power Monitor For Residential PV Support) In reference to claim 47, Rosenthal et al. teach a first power sensor, operatively connected to the output of the solar powered electrical supply, for producing a signal, representative of the electrical power being produced from the array. Note "User installable sensors" paragraph, lines

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1-17. Rosenthal et al. teach a radio (transceiver), operatively connected to said first power sensor, for broadcasting a signal that is representative of said power signal; Note "Remote display capability" second paragraph, lines 1-9. Rosenthal et al. teach a generally portable unit for receiving said power signal from said radio and for visually displaying a representation of the electrical power being produced from the array. Note "Remote display capability" second paragraph, lines 1-9. In re Lindberg, 194 F.2d 732, 93 USPQ 23 (CCPA 1952) (Fact that a claimed device is portable or movable is not sufficient by itself to patentably distinguish over an otherwise old device unless there are new or unexpected results.).

The primary reason for the allowance of claims 1-24 is the inclusion of the limitations of an a circuit, carried by the building and having a clock, for computing a running performance signal by using at least the predetermined performance rating, and said irradiance signal, and a measure of the electrical power supplied to the load from the array. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 25-28 is the inclusion of the limitations of an (a) a generally fixed unit that is adapted to be carried by a building to which an electrical utility supplies electricity to a load, said building having a roof carrying photovoltaic cells supplying electricity to the load, and an outdoor temperature, said unit being adapted to receive a first signal that is representative of electrical power

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consumed by said load and provided by the utility, a signal that is representative of photovoltaic electrical power consumed by said load, a first signal that is representative of said outdoor temperature, a second signal that is representative of solar irradiance on said roof, and a time signal that is representative of time; a circuit within said unit using at least said first and said second representative signals and time to derive a signal that is representative of expected power output of said photovoltaic cells, said unit including a relatively short range radio for broadcasting information that is representative of at least said derived signal. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 29-37 is the inclusion of the limitations of an (iii) circuitry, receiving signals representative of the outdoor temperature, solar irradiance and time, for repeatedly producing a signal representative of the expected photovoltaic electrical power output (iv) a circuit for producing an output signal that is a function of the difference between said expected photovoltaic electrical power output and actual photovoltaic electrical power consumption; and (v) a radio to broadcast information that is a function of photovoltaic electrical power output, said irradiance signal and said output signal; and (b) a generally movable unit for receiving said information from said radio means and for visually displaying photovoltaic electrical power consumption, solar irradiance, and said output signal. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found,

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taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 44-46 is the inclusion of the limitations of an (iii) a signal from a clock that is representative of time, said fixed unit comprising a radio for transmitting information that is a function of signals (i) through (iii) and a signal that is representative of the expected performance of the photovoltaic electrical power supply and that is derived at least from signals (i) through (iii); and (b) a receiver that is substantially movable for receiving said information from said radio and for visually displaying representations of time, photovoltaic electrical power consumption, and said performance signal. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 59 is the inclusion of the limitations of an a first circuit,, operatively connected to said first power sensor, for deriving a running performance signal by using at least said irradiance signal and said signal representative of the electrical power being produced; a second circuit, operatively connected to said first power sensor and to said second power sensor, for deriving a signal that is representative of the percentage of the total electrical power the building is using that is provided by the array; a radio, operatively connected to said first circuit and to said second circuit, to broadcast a signal that is representative of the percentage of the total electrical power that the building is using and that is provided

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by the array, and to broadcast said performance signal; . It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 60 is the inclusion of the limitations of an a performance circuit for deriving a running performance signal by using at least said irradiance signal and said signal representative of the electrical power being produced from the array; a clock (f) memory; (g) a computation circuit, operatively connected to said first power sensor, to said clock and to said second power sensor, for storing in memory data that represents the percentage of the total electrical energy supplied to the load that is provided by the array over one day, (h)a radio, operatively connected to said performance circuit and to said memory, to broadcast signals that are representative of said data stored in memory and said performance signal; and (i) a generally movable unit for receiving signals from said radio, and visually displaying said daily percentage of the total electrical energy that is provided by the array, and said running performance. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Claims 47-58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



In reference to claim 48 the prior art of record does not teach the inclusion of the limitations of an wherein said array has a predetermined performance rating; and further including: (d) an irradiance sensor, in solar communication with the array, for producing a signal representative of solar irradiance; and (e) a circuit, carried by the building, for deriving a running performance signal by using at least the predetermined performance rating of the array and said irradiance signal and said signal representative of the electrical power being produced; wherein said radio is operatively connected to said circuit to broadcast said performance signal; and wherein said portable unit comprises means for receiving said performance signal from said radio and for visually displaying said performance signal. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record.

In reference to claim 49-50 the prior art of record does not teach the inclusion of the limitations of an (d) an irradiance sensor, in solar communication with the array, for producing a signal representative of solar irradiance, wherein said radio is operatively connected to said irradiance sensor to broadcast said signal that is a function of said irradiance signal; and wherein said portable unit comprises means for receiving said irradiance signal from said radio and for visually displaying solar irradiance. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record.

In reference to claim 51 the prior art of record does not teach the inclusion of the limitations of an (d) a second power sensor, operatively connected to said external electrical supply, for producing a signal representative of the electrical power supplied to the building; an d(e) a circuit, connected to said first power sensor and to said second power sensor, for deriving a signal that is representative of the total electrical power the building is using, wherein said radio is operatively connected to said circuit to broadcast, a signal that is a function of the total electrical power the building is using; and wherein said portable unit comprises means for receiving said total electrical power signal from said radio and for visually displaying said total electrical power the building is using. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record.

In reference to claim 53 the prior art of record does not teach the inclusion of the limitations of an a clock; memory; and a circuit operatively connected to said clock and said first power sensor for storing in memory a representation of the amount of energy (kWh) the solar array produced over a calendar day, wherein said radio is operatively connected to said memory to broadcast a signal that is a function of said daily solar power production; and wherein said portable unit comprises means for receiving said daily solar power production signal from said radio and for visually displaying said daily solar power production. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record.

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In reference to claim 54 the prior art of record does not teach the inclusion of the limitations of an (d) a clock (e) memory; (f) a second power sensor, operatively connected to said external electrical supply, for producing a signal representative of the electrical power supplied to the building; and (g) a circuit, connected to said first power sensor, to said clock and to said second power sensor, for storing in memory a representation of the percentage of the total electrical energy the building is using that is provided by the array over one day wherein said radio is operatively connected to said circuit to broadcast a signal that is a function of said percentage of the total electrical energy the building is using that is provided by the array each day; and wherein said portable unit comprises means for receiving said daily percentage of the total electrical energy signal from said radio and for visually displaying said daily percentage of the total electrical energy that is provided by the array. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record.

In reference to claim 55-56 the prior art of record does not teach the inclusion of the limitations of an wherein said radio is operatively connected to said circuit to broadcast a signal that is a function of said percentage of the total electrical energy the building is using that is provided by the array each day; and wherein said portable unit comprises means for receiving said daily percentage of the total electrical energy signal from said radio and for visually displaying said daily percentage of the total electrical energy that is provided by the array. It is these limitations found in each of the claims, as they are

claimed in the combination, that has not been found, taught or suggested by the prior art of record.

In reference to claim 57 the prior art of record does not teach the inclusion of the limitations of an (d) a clock, and (e) memory, wherein said signal representative of the electrical power being produced from the array is periodically sent into said memory and aggregated in response to said clock; wherein said radio is operatively connected to said memory to broadcast said aggregated electrical power signals; and wherein said portable unit comprises a means for receiving said aggregated electrical power signal, and a display of solar electricity production over a plurality of days. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record.

In reference to claim 58 the prior art of record does not teach the inclusion of the limitations of an wherein said a display of solar electricity production over a plurality of days shows the cumulative energy (kWh) produced by the solar electric system since it was installed.. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record.

***Allowable Subject Matter***

Claims 38 are allowed.

The best prior art of record particularly Rosenthal et al. (Low Cost AC Power Monitor For Residential PV Support) teach a monitor that incorporates a power line carrier remote display however does not teach the following claim limitations.

The primary reason for the allowance of claims 38-43 is the inclusion of the limitations of an circuitry, utilizing time and said signal representative of power consumed by the load from said solar power supply and said solar irradiance signal, for producing an output signal representative of the efficiency of said solar electrical power supply and a portable display, spaced apart from said radio transmitter, for receiving information from said radio transmitter and for visually displaying generated power consumption, solar power consumption, solar irradiance, and a measure of said efficiency of said solar power supply. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetrius R. Pretlow whose telephone number is (571) 272-2278. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Demetrius R. Pretlow

*Demetrius Pretlow* 2/30/07

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